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THE BASIS OF INDUCTION.

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VI.

Before seeking to demonstrate the law of final causes, as we hope we have demonstrated that of efficient causes, it will not be useless to recall the reason which determined us to regard this law as one of the elements of the principle of induction; this reason borrows otherwise a new power from the preceding conclusions. We know now that simple phenomena which form the tissue of all the others are nothing more than movements; we know that the mechanical laws are the only ones which are primitive and immediate, and that other laws of nature express only a mediate connection derived from certain combinations of movements. Now, in order that this connection may be considered as constant, it evidently does not suffice that the movement should continue to obey the same laws; for the role of these laws limits them to subordinate each movement to a precedent, and does not extend so far as to co-ordinate between them a series of movements. It is true that if we knew at a given moment the direction and swiftness of all the movements which are going on in the universe, we might be able to dedúce vigorously from them all the combinations which ought to result from them; but induction consists precisely in the reverse of this problem, in supposing, on the contrary, that the whole of these directions and of this swiftness ought to be such as will be reproduced at a named point of these combinations. But, to say that a complex phenomenon contains the reason of simple phenomena which concur to produce it, is to say that it is the final cause of it. The law of final causes is then an element, and even the characteristic element of the principle of induction.

To render this verity more sensible, let us ask what basis we can make for the actual order of nature, if we have only, to guarantee us the maintenance of it, the law of efficient causes, or, what amounts to the same, universal mechanism. We have, to begin with, no reason to believe in the permanence of living species, because we have no idea of the imperceptible movements by which each original being is organized and developed; we might suppose, indifferently, either that each generation would give birth to a new species, or that it would produce only monsters, or that life would disappear entirely from off the earth. But the conservation of brute matter (*corps brut*) does not appear to us more certain than that of organized beings: because we admit generally that these bodies, without even excepting those which chemistry regards provisionally as simple, are composed of still smaller bodies; and there is no reason for considering more than the general laws of movement in order that these small bodies should continue to group themselves in the same order rather than to form new combinations, or even rather than not to form any. In short, the existence of these small bodies would be as precarious in our eyes as that of the great ones; for they, doubtless, also have parts, since they have extension, and the cohesion of these parts can only be explained by a concourse of movements which push them incessantly, one towards the other. They are only, then, in their turn systems of movements, and mechanical laws are in themselves indifferent whether to create or to destroy them. The world of Epicurus, before the encounter of atoms, offers us only a feeble idea of the degree of dissolution to which the universe, in virtue of its own mechanism, might be reduced from moment to moment; we may represent to ourselves cubes or spheres falling in the void, but we cannot represent to ourselves even this sort of infinitesimal powder or dust without figure, color, without appreciable property by any sensation whatever. Such a hypothesis seems monstrous to us, and we are persuaded that even when such a particular law fails, there will subsist always a certain harmony of the universe; but whence shall we know this if we do not admit *a priori* that this harmony is, in some sort, the supreme interest in nature, and that the causes of which it seems the result necessarily are only means wisely concerted to establish it.?

The law of final causes is, then, as well as that of efficient causes, an indispensable element of the principle of induction; but there is between these laws a double difference, which it is not useless to notice. We may remark primarily that the diverse judgments by which we apply them to phenomena are hypothetical for the first, and categorical for the second: that is to say, that the first determines each phenomenon only through relation to a precedent of which it supposes the existence, while the second posits absolutely and without condition each of the real or presumed ends of nature. In way of compensation, the law of efficient causes is of a necessary and vigorous application, which does not admit of degrees; since as soon as all the conditions of a phenomenon are united, we cannot admit without absurdity that this phenomenon would not reproduce itself, or would reproduce itself otherwise than the mechanical law would exact of it. The law of final causes is, on the contrary, a flexible and contingent law in each one of its applications. It exacts absolutely a certain harmony in the whole of phenomena, but it does not guarantee to us either that this harmony will be always composed of the same elements, nor even that it will never be troubled by any disorder. We believe, as Kant has said, that there will be always in the world a hierarchy of genera and of species, which we may be able to seize; but it is impossible for us to decide if the product of a given generation will not be a monster, or if the species which exist to-day may not give birth, by an insensible transformation, to species entirely different. Nature is at once a single science, which does not weary itself in deducing effects from causes, and an art which essays without ceasing, new inventions; and if it is given to us sometimes to follow by our calculation, the uniform march of the science which works at the bottom of things, induction, properly so-called, consists rather in divining, by a sort of instinct, the variable processes of the art which plays upon the surface of things.

It remains to demonstrate the law of final causes, that is to say, to show that this law results, as that of efficient causes, from the relation of phenomena to the thought; but this genus of demonstration, which has appeared to us the only valuable one, seems to us interdicted by the very use we have made of it just now. We have in fact established that the possibility of thought rested upon the unity of the object, and that this unity consisted in the mechanical connection of causes and effects. Have we not declared by that even that all other connection, and among others that of means with ends, was foreign to the essence of thought and indifferent to its existence? We have added that the objective existence of phenomena themselves was founded upon their necessary connection. Can we search in this same existence a new basis, and will the phenomena be more true and more objective because of this unity of the series, which makes each movement born of a precedent, when there is added to it the unity of system which makes many movements converge towards one common end? Is it not, on the contrary, evident that this second unity is entirely supererogatory, and that the thought, instead of introducing it itself into things, is reduced to wait upon it as upon a happy accident and a sort of favorite of nature?

We are tempted here to make a detour and to call upon sensibility to resolve the question upon which the understanding seems forced to recognize its incompetence. A world in which motion, without ceasing to obey its own laws, would not form any composition, or would form only discordant compounds which would destroy themselves, would be, perhaps, less conformed than ours is to the exigencies of thought; but it would be far from answering to that of our sensibility, since it would leave it in the first case absolutely empty, and would cause it, in the second, only painful modifications. We may then demand why, since our faculty of knowing meets with objects exactly proportioned to it, our faculty of feeling does not exert itself, or exerts itself only in a manner contrary to its nature. We may still further demand what good we serve in such a world, and why things whose existence wounds us, or is indifferent to us, have taken for us the place of absolute nothingness. Nevertheless, however just these considerations may be, they can not form a proof, properly so-called, in favor of the law of final causes; for to suppose that things ought to answer to the exigencies of our sensibility, or that existence of these same things can be determined only by our interest, is evidently to take for a principle the very law we propose to establish. We cannot suppress by thought the mechanical nexus of phenomena, and we have the right to say that this nexus exists necessarily, because for us what is absolutely inconceivable is absolutely impossible. We cannot, with advantage, desire that order and harmony should disappear from the universe, but we are at perfect liberty to conceive it, and the horror with which such an hypothesis would inspire us does not authorize us to say it can never be realized. To say that our sensibility alone exacts from phenomena the finality we attribute to them, would be to avow that this finality is not susceptible of any demonstration, and that if it is for us an object of legitimate desire, it can not be that of a necessary knowledge.

But because the law of final causes interests our sensibility above all, it does not in any wise result that it should be foreign to the essence of thought; and we do not renounce the establishment of the fact that the thought itself supposes the existence of this law, and imposes it consequently upon nature, although in another sense and by another title than that of efficient causes. We have admitted that the thought supposes the unity of its object, or rather that it is itself nothing else but this unity; and the nexus so necessary of causes and effects has seemed to us, so far, the only means of reducing the diversity of phenomena to the unity of thought. We must acknowledge that we have only obtained by this means an incomplete and superficial unity; for that which becomes one, in virtue of this nexus, is not the things in themselves, but the series of places which they occupy in time, and the movement of thought which passes without interruption from one to the other. It is one thing, in truth, for a phenomenon to have its place in time, and to be thus a verity and not an illusion; it is another thing to fill this place with a reality which is proper to it, and which distinguishes it from a phenomenon purely possible. It is this reality which is, in each phenomenon, the object of sensation, but we do not yet see how it can be the object of thought, since the condition of thought is unity, and each reality is given to us by sensation outside of all relation with others. A thought which rests exclusively upon the mechanical unity of nature glides over the surface of things in some sort, without penetrating into the things themselves. A stranger to reality, it wants reality itself, and is only the empty form and abstract possibility of a thought. We must, therefore, find a means of rendering at once thought real, and reality intelligible; and this means can be only a second unity, which will be to the matter of phenomena what the first is to their form, and which permits the thought to seize by a single act the contents of several sensations. It is true that if several sensations may coincide in a single perception, we have not consciousness of embracing in a single perception the whole reality; so that while the first unity is, so to speak, adequate to the universe, the second seems always restricted to the small number of phenomena which at each moment compose our sensible horizon. But this, which is true for our distinct perceptions, is not perhaps so for our confused perceptions; not only because, in fact, if we believe with Leibnitz, we never cease entirely to perceive what we have once perceived, but our perceptions in the future are in some sort preformed in our present perceptions; and when we believe we pass from one object to another, we only make clear, in turn the different parts of a picture which has already been wholly present in the thought. Now, several phenomena, or what amounts to the same thing, several movements, can be the object of a single perception only if they are harmonic; that is to say, if there exists among them velocities and directions, relations easy to seize; because it is only in applying a common measure to several things that we are able to perceive them as one thing. It is the same in the groups of phenomena which correspond to each of our distinct perceptions; in order that we may be able to envelop them in their turn in a single confused perception, they must be harmonic, or rather they must form a melodious series in which the first accord will be repeated in some sort even in the last. The first unity of nature was the unity purely extrinsic, of a radical diversity; the second is, on the contrary, the intrinsic and organic unity of a variety, of which each element expresses and contains in its own manner all the others. But the reciprocal accord of all the parts of nature can only result from their respective dependence in respect to all; it is necessary, then, that in nature the idea of all should precede and determine the existence of the parts; or, in a word, it is necessary that nature should be controlled by final causes. Doubtless, this proof does not assure, and is not able to assure, to the law of final causes the character of absolute necessity, which belongs only to that of efficient causes; because thought can conceive everything except its own annihilation, and universal mechanism, which makes each phenomenon a verity, suffices by that alone to assure its existence. But this existence, which is purely abstract, would be for it a state of feebleness and of death; and that it should, on the contrary, draw into its commerce with reality life and the sentiment of itself, is what it does without hesitation decide by an action, not of knowledge but of will.

It is not only thought, it is also nature, that the law of final causes makes an abstract existence pass into a real existence; and it is in the distinction of these two existences that we must look for the justification of that which common sense has always established between our knowledge and its objects. The only existence which we have so far accorded to nature consists, in fact, in the necessary nexus of phenomena; and if this existence is independent of our sensibility, we must agree that it resides only and wholly in our understanding. We have not then gone outside of ourselves, and we do not see, indeed, how we are to get outside of ourselves; since nothing is given to us outside of phenomena, which are nothing more than our own sensations, and these relations, which constitute our own thought. But we have seen that phenomena have between them two sorts of relations—relations of cause to effect, by which they form a continuous series in time, and relations of means to ends, upon which rests the harmonic and systematized unity of nature. Now, we have been able to say that a phenomenon *existed,* in so much as it depended upon a cause which preceded it in time, since the existence of a phenomenon can only be for us the reason in virtue of which the phenomenon should appear to the consciousness. We can say equally well that a phenomenon *existed,* in so much as it realizes an end still ideal; because this end is a new reason which determines the production of the same phenomenon, in virtue, not of an absolute necessity, but of a principle of order and of convenience. This second definition of existence accords better even than the first with the idea which is generally held when one speaks of a *being* (etre); for what we call by this name, above all when it signifies a living being, is precisely a group of phenomena which gravitate, in some sort, around a common end.

Thus nature possesses two existences founded upon the two laws that thought imposes upon phenomena—an abstract existence identical with the science of which it is the object, which rests upon the necessary law of efficient causes, and a concrete existence identical with what we might call the aesthetic function of thought which rests upon the contingent law of final causes. We cannot say, therefore, that nature may be absolutely external to our thought, since in that case she would be for as if she did not exist; and on the other hand, as the word *thought* designates above all the logical function of our minds, we conceive very well that thought, thus extended, distinguishes itself from nature considered as an object of perception and in its real existence. But this is not all; whilst the mechanism of nature fills, by a continuous evolution, the infinite of time and space, the finalty of this nature concentrates itself, on the contrary, in a multitude of distinct systems, although they are analogous one to another; and we are, inasmuch as we are individual, but one of these systems which owes to its particular organization the reflected consciousness of itself and of those which surround it.

Thus nature opposes itself to science not only as a concrete thought to an abstract thought, but this thought resolves itself in its turn into the individual thoughts which form the unity of each system; and although each one of these thoughts, as Leibnitz believes, represents or rather really envelops all the others, it does not the less constitute, by the difference alone of their points of view, as many independent substances which are alternately subject and object of universal consciousness. Behold here the teleological unity of each being, without prejudice to the mode of intuition to which we may be elevated in another life, the veritable *noumena* of which phenomena are only manifestations, and which we seize even now not by an abstract conception or a blind sensation, but by a sensible and intellectual perception at once. Perhaps we shall be forced to reverse the relation of terms which we have borrowed from the language of Kant, and to say that if the mechanical unity of nature is objective, through relation to the simple modifications of our sensibility, it is still only subjective through relation to a teleological unity which places existence outside of our intelligence, and makes thought an object for itself. But, whatever terms we may employ, it is certain that science, properly so-called, bears only upon the material conditions of veritable existence, which is in itself finality and harmony ; and, since all harmony is a degree, however feeble it may be, of beauty, we need not fear to say that a verity which is not beautiful can be only a logical play of our minds, and the only verity, solid and worthy of the name of truth, is beauty.

But we may go still further: We may establish that the abstract existence, which consists in mechanical necessity, has need herself of finding a point of support (*point d' appui*) in the concrete existence, which belongs only to the order of final ends, and that thus finality is not only an explanation but the *only* explanation which is complete of thought and nature. Each phenomenon, in fact, is determined mechanically, not only by all those which precede it in time, but also by those which accompany it in space. For it is only in virtue of their reciprocal causality that several simultaneous phenomena may be the object of the same thought and make part of the same universe. Now, these phenomena are, of parts and of others, in infinite number; because the first phenomenon in time will be that one which will succeed to an empty time, even as the last phenomenon in space ought to be contiguous, at least on one side, to space itself; but time and space cannot be on this side or beyond any thing because they are not themselves things but simple forms of our sensible intuition. It is evident otherwise that the retrogression of effects to causes ought to fill an infinite past, since each term of this retrogression has no less need than the first of being explained by an antecedent. The mechanical explanation of a phenomenon given can then never be finished, and an existence founded exclusively upon necessity would be an insoluble and contradictory problem for thought. But the order of final causes is freed from the contradiction which weighs in some sort upon that of efficient causes; for although the diverse ends of nature may play one to the other the role of means, and thus that the whole entirety of nature may be suspended upon an end which transcends it, each one of these ends has not the less in itself an absolute value, and may be able without absurdity to serve as a term for the progress of thought. It is only, then, in its progress towards ends that thought can find the point of arrest, which it seeks vainly in its retrogression towards causes, properly so called; and if all explanation ought to start from a fixed point or a given one which explains itself, it is evident that the veritable explanation of phenomena is not that which descends from causes to effects, but that which mounts upward, on the contrary, from ends to means. There is not, in truth, any inconvenience in mounting up to the infinite from condition to condition if we attach each one of these conditions, not to that which precedes it in time, but to that which follows and which requires it; because one is always free to stop in the series of these exigencies, even as, in the order of time and of causality, we push only so far as we choose the consideration of effects from a given cause. Doubtless we cannot escape from the law of efficient causes, nor forget that the end only exacts means, because it supposes them, and only supposes them because they produce it; and, on another side, when one sees the point of departure recoil to infinity before the glance of thought, one is obliged to acknowledge or grant that it is only an illusion of our intelligence, which reverses the order of nature in essaying to comprehend it. The true reasons of things are the ends, which constitute under the name of forms, the things themselves. Matter and causes are only a necessary hypothesis, or rather an indispensable symbol by which we project in time and space that which is in itself superior to both. The opposition of the concrete and of the abstract, of finality and of mechanism, rests only upon the distinction of our faculties; a thought which could renounce itself in order to lose, or rather, to regain itself wholly in things, would know no other law than harmony, no other light than beauty.

It is not, then, as we have believed, universal necessity, it is rather universal contingency, which is the veritable definition of existence, the soul of nature and the last word of our thought. Necessity reduces itself to nothing, since it is not even the necessary; and what we call contingence, in opposition to a blind and brutal mechanism, is on the contrary a necessity of convenience and of choice, the only one which renders a reason for all things, because the only good for itself is its reason. All that is should be, and nevertheless might possibly, rigorously speaking, not be; other possible things, according to Leibnitz, pretended also to existence, and have not obtained it, lacking a sufficient degree of perfection. Things *are*, because they will it and *are worthy of it* at one and the same time.

VII.

The law of final causes is going now to furnish us, upon the nature of phenomena in themselves, with certain indications which will, perhaps, serve to complete those which we have drawn from the law of efficient causes. We are able to represent to ourselves only three modes in which relations are established, in a system of phenomena, between the end and the means; either the end exerts upon the means an external and mechanical action, or this action is exerted, not by the end itself, but by a cause which knows it and desires to realize it, or, in fine, the means range themselves in a convenient order to realize the end. The first hypothesis is absurd, since the existence of the end is posterior in time to that of the means; the second is useless and is confounded with the third, because the cause to which we have recourse is only a means which does not essentially differ from others, and to which is accorded, by an arbitrary preference, the spontaneity which is refused to them. The knowledge through which the action of the cause is explained does not produce it, or only produces it by accident; because the object of its knowledge cannot become the term of its action unless it represents it as a good, and it can represent it as a good only so far as this object solicits its activity by itself and by an attraction independent of all knowledge. All phenomena, or what comes to the same thing, all motion, is then the product of a spontaneity directed toward an end; but a spontaneity directed toward an end is a tendency, and a tendency which produces motion is a force; all phenomena are, then, not a force but the development and the manifestation of a force. This new definition of phenomena, far from destroying that which we have admitted previously, completes our understanding of it; for motion itself subsists only by force, in virtue of which the *moveable* (mobile) goes at every instant out of the place it occupies to enter into another. There is, in truth, in all motion two things which it is impossible to separate, and which it is important, nevertheless, not to confound: the one is the indiscriminate production of a movement which adds itself to the sum of anterior movements; the other is the particular determination of the same movement in a certain direction and at a certain velocity. Now, we have truly explained why a motion which succeeds to another ought to preserve as much as possible the same direction and the same velocity; but why this succession if not because each movement envelops a tendency to an ulterior movement; and why this tendency itself, if not because every and each state of nature explains itself only by that which follows it, and its whole existence only by a continuous progression in harmony and in beauty. Motion responds to the law of efficient causes only in so far as it is always one and equivalent to itself; in so far as it is always diverse and that it never ceases to offer new objects to thought, it has nothing of the necessary and nothing of mechanism, but it belongs exclusively to dynamism and to the teleology of nature.

We have before considered the secondary qualities as modes of motion; we ought to consider them now not as modes but as effects of force. The first explanation leads to the second, which in its turn completes the first. If, in truth, these qualities repose only upon motion, it would be impossible to understand how they affect us by sensations of an appreciable intensity; for motion is in itself a phenomenon purely extensive, which addresses itself only to our imagination, and which belongs not to the order of quality but to that of quantity. It is necessary, then, that these, insomuch as they are so, should have no foundation outside of us, or that there should be something *intensive* in the phenomena from which they proceed; but this something can be nothing less than the action of a force, and this action can only exert itself upon another force, which acts in its turn upon the first. All sensation is conscious, at least indirectly, of the conflict of the two forces; but we have a direct consciousness of this conflict when we evolve a voluntary effort, whether it be to produce a movement and surmount a resistance, whether it be to oppose ourselves to the movement of a body which pushes or drags our own. We perceive then all at once movement by motion and force by force; and we find ourselves in presence of a world which is for us, so to speak, doubly external, since our own force appears no less distinct to us from the foreign forces than all these together from ourselves and our thought. Common sense is right, then, not only against vulgar idealism, but still more against what one might call the mathematical idealism of Descartes. The veritable world is composed neither of pure sensations nor of clear ideas, but of physical and real actions, of which motion is but the measure, and of which all the rest is only an appearance. But a world of physical realities is not a world of metaphysical entities. Force is not any more a thing in itself than movement, or rather force and motion are only the two opposed faces of the same phenomenon, seized by the same sense, on one side under the form of time, and of the other under that of space. We know no other absolute existence than that of the double law of efficient causes and of final causes; but we cannot comprehend the finality except as it realizes itself in the tendency to motion, just as we cannot represent to ourselves necessity except under the figure of movement itself.

Between the extended unity of thought and the diversity of sensible appearances there must be a middle term, and we have found this in motion; between this same diversity and the intensive unity of thought there must be a second, and we find that in force.

In a nature where all is at once necessity and finality, movement and tendency, physiological mechanism does not exclude life, and liberty may conciliate itself with the determinism of human actions.

A living being, in regarding it only from the outside, is an organized body, that is to say, composed of heterogenous parts of which each one conduces, by a particular kind of movement, to the conservation of the whole. Organization, then, is only a form of finality; but if the finality is in all phenomena the hidden source of mechanism, there is nothing in the formation of an organism which exceeds the ordinary power of nature, and which exacts the intervention of a special principle. Will it be said that there is an abyss between an unformed pebble and the most humble of plants? Doubtless, but this pebble is not a complete being; it is a fragment detached from one of the layers which compose the rind or shell of our globe. This globe makes a part of a planetary system, and who knows if such a system is not an embryo and a rudiment of organism? We do not pretend either to fill the interval which separates finite matter from living matter, nor to explain how nature has succeeded in crossing over it; but we do not hesitate to say that she ought to cross it, and that she ought to create even a hierarchy of organisms analogous, if not similar, to that we know. The law of final causes exacts, in truth, on the part of phenomena not some sort of a degree, but the very highest possible degree of order and of harmony. Now, the process of organization consists precisely in the growing multiplicity of movements which compose a single system, and which we embrace in a single sensation. But life has a character more internal and in some sort more spiritual than the organization; it consists, above all in the tendency of each organ to fill the function assigned to it, and it is that tendency which one believes is explained in realizing it under the name of vital force, in principle distinct from the organism. Now we know already that all phenomena are products of force; we are then prepared to recognize in vital phenomena the action of a vital force. We do not even contest the verity of this force, and nevertheless we believe that it is not substantially distinct from the motive forces which act in each one of living molecules. If, in truth, force were a thing in itself, it would be contradictory to represent it as one and multiple at the same time; but if it is only the tendency of movement towards an end, we can admit without contradiction that there are in the universe as many forces as there are movements, and that several movements which tends toward one end are the expression of one single force. It is thus that we can reconcile, in the explanation of celestial phenomena, the theory of impulsion with that of universal attraction. It is thus we can maintain a hierarchy entire of chemical or vital forces, that is to say, not of *entities* but of *ideas*, the directing and efficacious desires of nature.

But each of these forces does not exist the less really and in itself; they are not the result, more and more complex, of a certain number of simple forces, because this pretended simplicity is only the imaginary term of an indefinite resolution, and there are no more atoms of force than atoms of extension. It is not the superior powers of nature which result from the accidental union of inferior powers; it is, on the contrary, the second which are contained eminently in the essential unity of the first, and who disengage themselves out of them by a sort of parcelling out, or to speak better, of refraction.

Nevertheless life presents, at least under its most elevated form, a third character; the animal perceives himself; he perceives more or less distinctly the beings which surround him. Has he not then a soul which opposes itself at once to his own body and to all foreign bodies, or can we without absurdity accord to matter the feeblest degree of consciousness? The reply is very simple: Movement developed in the extended has no consciousness of itself, since it is, so to speak, altogether outside of itself; but movement concentrated in force is precisely perception: so Leibnitz has defined it—that is to say, the expression of multitude in unity. We may be able then to maintain that there is no force which does not perceive itself in perceiving the movement which it engenders; but the existence of perception, properly so-called, seems to be attached to two particular conditions, which nature has only realized by degrees, and one after the other.

It is necessary, then, in the beginning that force and motion, instead of dispersing themselves in time and in space, should assemble themselves into a certain number of systems; and it is necessary afterwards that the individuals of these systems should gather themselves together in reflecting themselves in a small number of foci, where consciousness exalts itself by a sort of accumulation and condensation. Will it be said that even when each of these forces which compose a nervous centre shall be endowed with consciousness, it is impossible to understand how all these isolated consciousnesses can confound themselves in a single one? That will be to forget that force is not a thing in itself, and that, if we can say that there are many forces there, where there are many movements, it is equally just to say there is but one there where there is but one system and but one idea of nature. We are then at perfect liberty to admit that consciousness resides in a single force, and to give to this force even the name of soul; but we should not forget that this name designates only the dynamic unity of the perceptive provision (appareil) in the same manner as life, properly so called, is only the dynamic unity of the whole organism. Thus, soul is not less, even in inferior animals, profoundly distinct from the body; for not only it concentrates in its unity all the details of their organic movements, but, in mixing with the obscure consciousness of their present condition, a consciousness still more obscure of their past conditions, it gives it to them like a second life which gathers up and conserves all that has run through to it from the first. But in proportion as the perceptive preparation (appareil) becomes firmer and more delicate, the soul extends with the sphere of its action that of its existence. The distinct images of external objects combine themselves in an always increasing or growing proportion with the confused impressions which proceed from the members, in such a manner that we may say of the more perfect animals that they exist at once in themselves and in all that surrounds them. In man nature has gone one step farther, in substituting for a play of images too limited and too much subjected to the organic influences of signs, always to be disposed of, and which suffice to represent all beings, because they only represent them by general characters, and thus finishes by disengaging the mind from the body in order to spread it in some fashion over the whole universe. Doubtless, this soul, identical with the things it represents, and which is only, according to the thought of Aristotle, the form of forms, is not that for which we hope everlasting life; but this sublime hope can only justify itself by moral considerations which are absolutely foreign to this study. It is also outside of all moral consideration that we will essay to reconcile liberty, of which each one of us has the consciousness, in the pursuit of sensible good, with the determinism, without which man would cease to be a part of nature. This conciliation is for the rest prepared for by that which we have just established between mechanism and life; because we are able to say that nature gives proof of a sort of liberty every time that she produces of herself and without a model a new organic form. There is also something free in the art which a great number of animals display in constructing their dwellings, or in surprising their prey; but we cannot say that this liberty belongs to them, because nature has formed for them, and at once for all of them, the plan after which they work. Liberty seems to consist, in fact, in the power of varying its designs and of conceiving new ideas: and the law of final causes exacts absolutely that there should exist such a liberty, since the systematic unity of nature can only realize itself by a succession of original inventions and or creations, properly so called. Only, there are in nature two sorts of ideas: there are those which one calls organic, which are beings at the same time as ideas, and which produce themselves by an immediate and internal action, the form under which they are manifested. There are others, on the contrary, which are pure ideas, and which limit themselves to direct the action of a being in which they reside. Such is, for instance, the idea of a nest which exists in itself only in the imagination of the bird, and which is only the rule of movements by which the bird realizes it in foreign matter. Now, so long as man had not appeared upon the earth, nature showed herself above all prodigal of real ideas, that is to say, that she created an immense variety of species, both of plants and animals, whilst she never gave to this last more than a small number of types of action, almost invariable, which compose what we call its instinct. But the coming of humanity reverses the relation of these two sorts of ideas, because, on one side, we do not see a new species created any longer, and. upon the other, the privilege of our intelligence is to invent in its turn and to conceive an infinite number of pure ideas, that our will forces itself later to realize outside of us. The bird constructs its nest, which is only in some sort but a prolongation of its body. Man changes the face of nature, and manufactures for his service bodies analagous to his own, which he animates with a sort of borrowed and artificial life. But what is most remarkable is that his ideas do not always relate to his own conservation. Those of his works to which he attaches the greatest value are precisely those which in some sort excel him and present to him the embellished image of his features or of his actions. The fecundity of nature re-finds itself, then, wholly and entirely, although under another form, in the liberty of man; and this transformation is a progress at the same time that it is a decadence, since it was reserved to the superficial labour of man to introduce into things a degree of harmony and of beauty which was lacking still to the living works of nature. But if nature had only to let the laws of motion act in order to vary to infinity the internal constitution of beings which she has created, why cannot man, then, without derogating from these same laws, vary his external acts and the form which he impresses upon the bodies which surround him?

It will be found, perhaps, that this explanation of liberty scarcely answers to the definition which is ordinarily given of it, but it is not difficult to show that that definition is false, and that in default of seeing liberty where it is, it is sought after where it is not, and where it can never be. The miracle of nature, in us as outside of us, is invention or the production of ideas; and this production is free in the most rigorous sense of the word, since each idea is in itself absolutely independent of that which precedes it, and is born of nothing, like a world. Now, it is certain that man will not find himself, in respect to the ideas which he produces, in the same situation as the animals in respect to the ideas which nature has given to them; for these latter have for every kind of action but one type from which they never depart, and which they realize, not by a reflecting will, but under the influence of a sort of fascination. Man only wishes and wills before acting, since only he can, with the aid of language, represent to himself distinctly his future action; and he does not will until after having deliberated—that is to say—compared many possible manners of acting, all equally possible, amongst which he selects that which seems to him the best. Now, it is in this choice or in the will which is inseparable from it, that most philosophers place liberty to-day; and this will consists according to them in that the will determines the action which follows it without being itself determined by the deliberation which precedes it. We have already rejected, in the name of experience, the hypothesis of an arbitrary choice which would render deliberation useless and will unreasonable; but this psychological error, not tenable if it is considered in itself, borrows all its strength from a metaphysical error which it is much more difficult to uproot. We find that ideas are something too subtle to subsist in themselves, and to sustain by themselves the action which realizes them. We make of the will, therefore, a substance, or at least the faculty of a substance of which it is but the accident, and which produces under the name of efficient causes that which it is declared incapable of producing except under the name of final causes. We convert thus in man, and by an irresistible analogy, in the rest of the universe, finality into mechanism; and we violate at once the fundamental law of mechanism, because we attribute to will the power of beginning a series of phenomena which attach themselves to no other. The will, such as we have defined it, is not a thing in itself, nor even a concrete and active power. It is only the reflection of a tendency upon itself, and it is by a sort of idolatry of understanding that we search in this reflection for the principle of the action which it enlightens. We are able to experience a sort of conflict between several tendencies, but we have no need of terminating it by an arbitrary decision; it is not only in us that the possible struggles in order to attain to existence, and the internal speech or discourse which distinguishes and compares these tendencies, does not pronounce between them with more certainty than the mute wisdom of nature. Invention only is free, since it depends solely upon itself, and that it decides upon all the rest; and what is called our liberty or free will is precisely the consciousness of the necessity in virtue of which an end conceived by our mind determines in the series of our actions the existence of means which ought in their turn to determine it.

Thus the empire of final causes, in penetrating without destroying into that of efficient causes, substitutes everywhere force for inertia, life for death, and liberty for fatality. The materialistic idealism by which we were an instant stopped, represents to us only the half, or rather, only the surface of things;

the veritable philosophy of nature is, on the contrary, a spiritualistic realism, in the eyes of which all is force, and all force a thought which tends to a consciousness more and more complete in itself. This second philosophy is, like the first, independent of all religion; but in subordinating mechanism to final cause, it prepares us to subordinate final cause itself to a superior principle, and thus to clear, by an act of moral faith, the limits of thought at the same time that we overleap the limits of nature.

THE RELATIVITY OF KNOWLEDGE.

[An Examination of the Doctrine as held by Mr. Herbert Spencer].

BY JOHN WATSON.

The doctrine of the Relativity of Knowledge has found in Mr. Herbert Spencer its most vigorous and most persuasive advocate. The author of *First Principles* cannot be justly accused of an excess of speculative subtlety, or of a criminal terseness of expression: he generally seizes upon the obtrusive aspects of the object he is contemplating, and allows the more delicate features of it to rest in unrelieved shadow; and what he sees himself he is determined that others shall also see at whatever cost of words. This wide-awake vision, and this command of language, impart to the writings of Mr. Spencer an air of declamatory dogmatism that is apt to offend men of finer but perhaps weaker fibre, who recoil from anything like intellectual arrogance or superfluity of language. To them it seems as if an attempt were made to intimidate their reason by the parade of logical puzzles, and to capture their assent by a steady pour of verbal grapeshot. But whatever estimate may be formed of his philosophical speculations, or of the way in which he presents his thoughts, at least there cannot be denied to Mr. Spencer the merit of relative consistency, as well as of great intellectual fairness and breadth of information. He may, and we believe he has, failed to profit as he might have done by the history of modern philosophy; but he has developed a fairly coherent system of thought from the pre-